



Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-40. (Canceled)

41. (Currently Amended) A graphite heater for producing a single crystal used when producing a single crystal by the Czochralski method ~~which comprises comprising:~~
at least a terminal part to which electric current is ~~supplied~~supplied; and
a cylindrical heat generating part that generates heat by resistance heating,
~~heating and are provided so as to surround a crucible for containing a raw material melt~~
wherein the cylindrical heat generating part surrounds a crucible that contains
a raw material melt,

wherein the heat generating part has heat generating slit parts formed by ~~being~~
~~provided with~~ upper slits extending downward ~~from the~~ from an upper end of the heat
generating part and lower slits extending ~~upwards from the~~ upward from a lower end of the
heat generating part by turns, and

wherein a length of at least one slit of the upper slits differs from ~~others~~ other
upper slits and/or a length of at least one slit of the lower slits differs from ~~others~~ other lower
slits so that a heat generating distribution of the heat generating part may be changed.

42. (Previously Presented) The graphite heater for producing a single crystal according to Claim 41 wherein the upper slit and/or the lower slit having a different length from other slits is periodically formed in a circumferential direction, resulting in that the heat generating distribution of the heat generating part is such that the high temperature part and the low temperature part are distributed periodically in a circumferential direction.

43. (Previously Presented) The graphite heater for producing a single crystal according to Claim 42 wherein the cycle of the heat generating distribution is such that one cycle is 180°.

44. (Previously Presented) The graphite heater for producing a single crystal according to Claim 42 wherein the cycle of the heat generating distribution is such that the cycle based on the upper slit and the cycle based on the lower slit are shifted by 45° or more and 135° or less in a circumferential direction.

45. (Previously Presented) The graphite heater for producing a single crystal according to Claim 43 wherein the cycle of the heat generating distribution is such that the cycle based on the upper slit and the cycle based on the lower slit are shifted by 45° or more and 135° or less in a circumferential direction.

46. (Previously Presented) The graphite heater for producing a single crystal according to Claim 41 which has two or more kinds of the upper slit having a length different from other slits and/or two or more kinds of the lower slit having a length different from other slits.

47. (Previously Presented) The graphite heater for producing a single crystal according to Claim 45 which has two or more kinds of the upper slit having a length different from other slits and/or two or more kinds of the lower slit having a length different from other slits.

48. (Previously Presented) The graphite heater for producing a single crystal according to Claim 41 wherein the upper slit and/or the lower slit having a length different from other slits has a length shorter than 50 % of a length from the upper end to the lower end of the cylindrical heat generating part.

49. (Previously Presented) The graphite heater for producing a single crystal according to Claim 47 wherein the upper slit and/or the lower slit having a length different from other slits has a length shorter than 50 % of a length from the upper end to the lower end of the cylindrical heat generating part.

50. (Currently Amended) An apparatus for producing a single crystal ~~at least equipped with~~ comprising the graphite heater for producing a single crystal according to Claim 41.

51. (Canceled)

52. (Currently Amended) A graphite heater for producing a single crystal used when producing a single crystal by the Czochralski method ~~which comprises~~ comprising:

at least a terminal part to which electric current is ~~supplied~~ supplied; and

a cylindrical heat generating part by resistance heating, ~~heating and are provided so as to surround a crucible for containing a raw material melt~~

wherein the cylindrical heat generating part surrounds a crucible that contains a raw material melt, and

wherein a heat generating distribution of the heat generating part is such that a high temperature part and a low temperature part are periodically distributed in a circumferential direction, and ~~the cycle~~ a cycle of the heat generating distribution of the heat generating part is shifted between ~~the upper~~ an upper side and ~~the lower~~ a lower side of a central line dividing the heat generating part in a height direction to the upper side and the lower side.

53. (Previously Presented) The graphite heater for producing a single crystal according to Claim 52 wherein the periodic heat generating distribution in a circumferential direction of the heat generating part is made by changing any one or more of a wall thickness

of a heat generating slit part, a width of a heat generating slit part, a length of a slit, and a material of a heat generating slit part.

54. (Previously Presented) The graphite heater for producing a single crystal according to Claim 52 wherein the cycle of the heat generating distribution is such that one cycle is 180°.

55. (Previously Presented) The graphite heater for producing a single crystal according to Claim 53 wherein the cycle of the heat generating distribution is such that one cycle is 180°.

56. (Previously Presented) The graphite heater for producing a single crystal according to Claim 52 wherein a shift of the cycle of the heat generating distribution between the upper side and the lower side of the central line is 45 ° or more and 135 ° or less.

57. (Previously Presented) The graphite heater for producing a single crystal according to Claim 55 wherein a shift of the cycle of the heat generating distribution between the upper side and the lower side of the central line is 45 ° or more and 135 ° or less.

58. (Currently Amended) An apparatus for producing a single crystal ~~at least equipped with~~ comprising the graphite heater for producing a single crystal according to Claim 52.

59. (Canceled)

60. (Previously Presented) The graphite heater for producing a single crystal according to Claim 41 wherein a length of the upper slit consists of two kinds, namely longer and shorter, a length of the lower slit consists of two kinds, namely longer and shorter, and the number of the shorter lower slit is more than the number of the shorter upper slit to change a heat generating distribution in the heat generating part.

61. (Previously Presented) The graphite heater for producing a single crystal according to Claim 60 wherein the number of the shorter lower slit is twice or more and 5 times or less of the number of the shorter upper slit.

62. (Previously Presented) The graphite heater for producing a single crystal according to Claim 60 wherein the two kinds of the upper slit and the lower slit are formed periodically in a circumferential direction, resulting in that the heat generating distribution of the heat generating part is such that a high temperature part and a low temperature part are periodically distributed in a circumferential direction.

63. (Previously Presented) The graphite heater for producing a single crystal according to Claim 61 wherein the two kinds of the upper slit and the lower slit are formed periodically in a circumferential direction, resulting in that the heat generating distribution of the heat generating part is such that a high temperature part and a low temperature part are periodically distributed in a circumferential direction.

64. (Previously Presented) The graphite heater for producing a single crystal according to Claim 62 wherein the cycle of the heat generating distribution is such that one cycle is 180° .

65. (Previously Presented) The graphite heater for producing a single crystal according to Claim 63 wherein the cycle of the heat generating distribution is such that one cycle is 180° .

66. (Previously Presented) The graphite heater for producing a single crystal according to Claim 62 wherein the cycle of the heat generating distribution is such that the cycle based on the upper slit and the cycle based on the lower slit are shifted by 45° or more and 135° or less in a circumferential direction.

67. (Previously Presented) The graphite heater for producing a single crystal according to Claim 63 wherein the cycle of the heat generating distribution is such that the cycle based on the upper slit and the cycle based on the lower slit are shifted by 45° or more and 135° or less in a circumferential direction.

68. (Previously Presented) The graphite heater for producing a single crystal according to Claim 64 wherein the cycle of the heat generating distribution is such that the cycle based on the upper slit and the cycle based on the lower slit are shifted by 45° or more and 135° or less in a circumferential direction.

69. (Previously Presented) The graphite heater for producing a single crystal according to Claim 65 wherein the cycle of the heat generating distribution is such that the cycle based on the upper slit and the cycle based on the lower slit are shifted by 45° or more and 135° or less in a circumferential direction.

70. (Previously Presented) The graphite heater for producing a single crystal according to Claim 60 wherein the shorter upper slit and lower slit has a length shorter than 50 % of a length from the upper end to the lower end of the heat generating part.

71. (Previously Presented) The graphite heater for producing a single crystal according to Claim 69 wherein the shorter upper slit and lower slit has a length shorter than 50 % of a length from the upper end to the lower end of the heat generating part.

72. (Previously Presented) The graphite heater for producing a single crystal according to Claim 60 wherein the longer upper slit and lower slit has a length of 70 % or longer of a length from the upper end to the lower end of the heat generating part.

73. (Previously Presented) The graphite heater for producing a single crystal according to Claim 71 wherein the longer upper slit and lower slit has a length of 70 % or longer of a length from the upper end to the lower end of the heat generating part.

74. (Currently Amended) An apparatus for producing a single crystal ~~at least equipped with~~ comprising the graphite heater for producing a single crystal according to Claim 60.

75. (Canceled)

76. (Previously Presented) The graphite heater for producing a single crystal according to Claim 41 wherein a length of the upper slit consists of two kinds, namely longer and shorter, and a width of a lower end of the longer upper slit is wider than a width of an upper end thereof, and/or a width of a lower end of the lower slit is wider than a width of an upper end thereof to change the heat generating distribution of the heat generating part.

77. (Previously Presented) The graphite heater for producing a single crystal according to Claim 76 wherein the lower end of the longer upper slit has a width of 1.5 times or more and 2.5 times or less of a width of the upper end thereof, and the lower end of the lower slit has a width of 1.5 times or more and 2.5 times or less of a width of the upper end thereof.

78. (Previously Presented) The graphite heater for producing a single crystal according to Claim 76 wherein the shorter upper slit has a length shorter than 50 % of a length from the upper end to the lower end of the heat generating part.

79. (Previously Presented) The graphite heater for producing a single crystal according to Claim 77 wherein the shorter upper slit has a length shorter than 50 % of a length from the upper end to the lower end of the heat generating part.

80. (Previously Presented) The graphite heater for producing a single crystal according to Claim 76 wherein the longer upper slit has a length of 70 % or longer of a length from the upper end to the lower end of the heat generating part.

81. (Previously Presented) The graphite heater for producing a single crystal according to Claim 79 wherein the longer upper slit has a length of 70 % or longer of a length from the upper end to the lower end of the heat generating part.

82. (Currently Amended) The graphite heater for producing a single crystal according to Claim 76 wherein the two kinds of the upper slit are formed periodically in a circumferential direction, resulting in that the heat generating distribution of the heat ~~generating~~ generating part is such that a high temperature part and a low temperature part are periodically distributed in a circumferential direction.

83. (Previously Presented) The graphite heater for producing a single crystal according to Claim 81 wherein the two kinds of the upper slit are formed periodically in a circumferential direction, resulting in that the heat generating distribution of the heat ~~generating~~ part is such that a high temperature part and a low temperature part are periodically distributed in a circumferential direction.

84. (Previously Presented) The graphite heater for producing a single crystal according to Claim 82 wherein the cycle of the heat generating distribution is such that one cycle is 180°.

85. (Previously Presented) The graphite heater for producing a single crystal according to Claim 83 wherein the cycle of the heat generating distribution is such that one cycle is 180°.

86. (Currently Amended) An apparatus for producing a single crystal ~~at least equipped with~~ comprising the graphite heater for producing a single crystal according to Claim 76.

87. (Canceled)

88. (Previously Presented) The graphite heater for producing a single crystal according to Claim 41 wherein each of a length of the upper slit and a length of the lower slit

consists of two kinds, namely longer and shorter, and the number of the shorter upper slit is more than the number of the shorter lower slit, to change the heat generating distribution of the heat generating part.

89. (Previously Presented) The graphite heater for producing a single crystal according to Claim 88 wherein the number of the shorter upper slit is 1.5 times or more and 5 times or less of the number of the shorter lower slit.

90. (Previously Presented) The graphite heater for producing a single crystal according to Claim 88 wherein the two kinds of the upper slit and the lower slit are formed periodically in a circumferential direction, resulting in that the heat generating distribution of the heat generating part is such that a high temperature part and a low temperature part are periodically distributed in a circumferential direction.

91. (Previously Presented) The graphite heater for producing a single crystal according to Claim 89 wherein the two kinds of the upper slit and the lower slit are formed periodically in a circumferential direction, resulting in that the heat generating distribution of the heat generating part is such that a high temperature part and a low temperature part are periodically distributed in a circumferential direction.

92. (Previously Presented) The graphite heater for producing a single crystal according to Claim 90 wherein the cycle of the heat generating distribution is such that one cycle is 180°.

93. (Previously Presented) The graphite heater for producing a single crystal according to Claim 91 wherein the cycle of the heat generating distribution is such that one cycle is 180°.

94. (Previously Presented) The graphite heater for producing a single crystal according to Claim 90 wherein the cycle of the heat generating distribution is such that the

cycle based on the upper slit and the cycle based on the lower slit are shifted by 45° or more and 135° or less in a circumferential direction.

95. (Previously Presented) The graphite heater for producing a single crystal according to Claim 91 wherein the cycle of the heat generating distribution is such that the cycle based on the upper slit and the cycle based on the lower slit are shifted by 45° or more and 135° or less in a circumferential direction.

96. (Previously Presented) The graphite heater for producing a single crystal according to Claim 92 wherein the cycle of the heat generating distribution is such that the cycle based on the upper slit and the cycle based on the lower slit are shifted by 45° or more and 135° or less in a circumferential direction.

97. (Previously Presented) The graphite heater for producing a single crystal according to Claim 93 wherein the cycle of the heat generating distribution is such that the cycle based on the upper slit and the cycle based on the lower slit are shifted by 45° or more and 135° or less in a circumferential direction.

98. (Previously Presented) The graphite heater for producing a single crystal according to Claim 88 wherein the shorter upper slit and lower slit has a length shorter than 50 % of a length from the upper end to the lower end of the heat generating part.

99. (Previously Presented) The graphite heater for producing a single crystal according to Claim 97 wherein the shorter upper slit and lower slit has a length shorter than 50 % of a length from the upper end to the lower end of the heat generating part.

100. (Previously Presented) The graphite heater for producing a single crystal according to Claim 88 wherein the longer upper slit and lower slit has a length of 70 % or longer of a length from the upper end to the lower end of the heat generating part.

101. (Previously Presented) The graphite heater for producing a single crystal according to Claim 99 wherein the longer upper slit and lower slit has a length of 70 % or longer of a length from the upper end to the lower end of the heat generating part.

102. (Currently Amended) An apparatus for producing a single crystal ~~at least equipped with~~ comprising the graphite heater for producing a single crystal according to Claim 98.

103. (Canceled)